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Ho:YAG Laser Long Pulse And Stabilization Mode Saves Time And Money: A Benchtop Kidney Stone Model

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Introduction

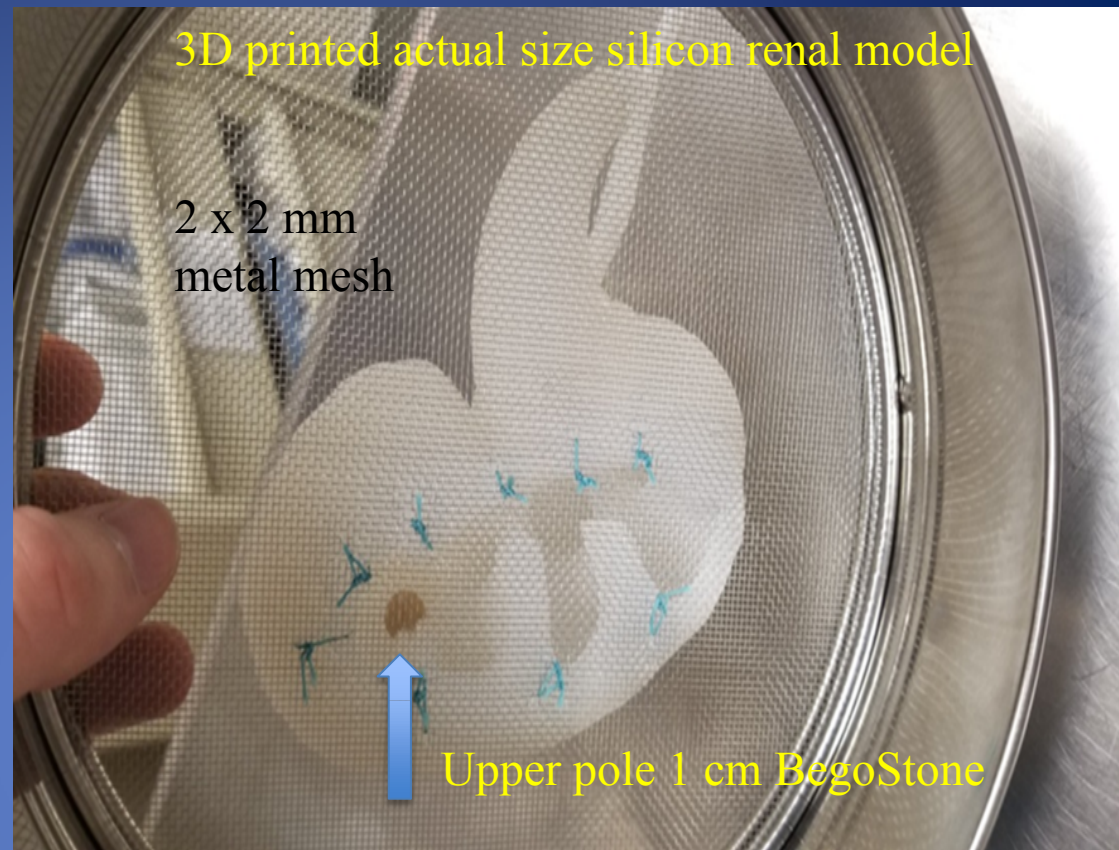
- Ho:YAG laser with the long pulse duration settings: prevent stone migration.

Aim

- To compare the effect of long pulse duration and stone stabilization mode to a conventional HL with no pulse modulation.

Methods

- Dornier 30W at regular mode
- Empower laser 100W at long pulse duration stabilization mode
- Same energy and fiber size: (1J/10Hz, 10W) (272 μm).
- Cost analysis: Fibers: \$313.73
Laser box: Empower \$95,000, Dornier \$35,000
Mean cost of OR time in California: \$37/min



Results

- Shorter procedure time resulted in a \$731.9 cost savings/case with long pulse stabilization mode
- Olympus Empower became cost effective after treating 81, one cm kidney stones

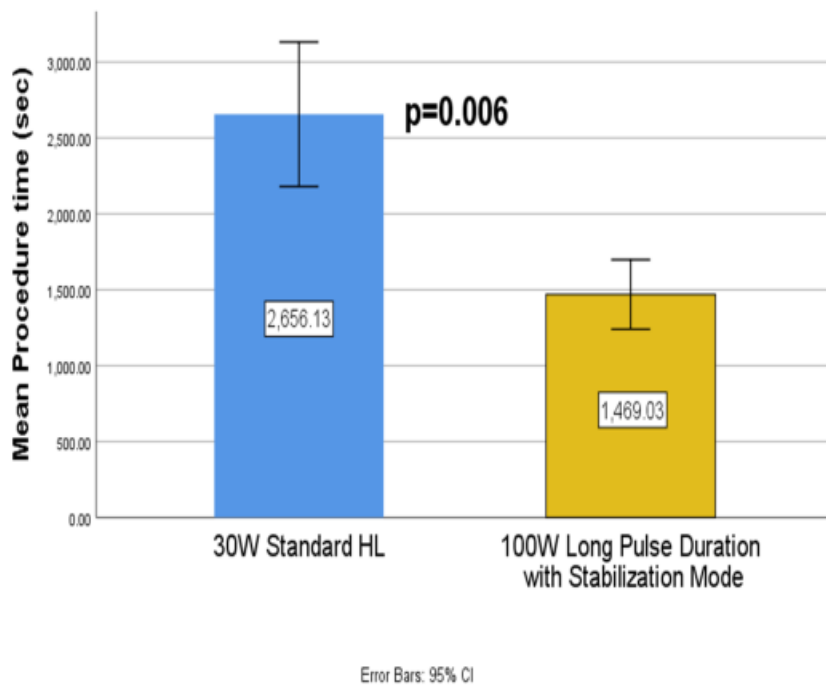


Table 1	Dornier 30W no pulse modulation	Empower 100W long pulse duration with stabilization mode	p
Lasing time (min)	24.07±3.1	19.88±1.9	0.028
Procedure time (min)	44.26±6.3	24.48±3.6	0.006
Total Energy (kj)	14.2±1.8	11.9±1.1	0.028
Fiber stripping	1	0	0.008

Conclusion:

- The 100W holmium laser with the combination of long pulse duration and stone stabilization was 44.7% faster, resulted in decreased laser fiber burnback and saved \$732 per case.